

LISTING OF CLAIMS

Please amend the Claims as shown below:

1. (currently amended) An optical position-tracking system comprising:
an optical device for generating an incident light beam and a reference light beam from a light beam, wherein said light beam has a plurality of wavelengths; and
a light beam steering device for sweeping said incident light beam through an angular range to cause a reflection of said incident light beam by a target, wherein said reflection of said incident light beam is directed to interfere with said reference light beam to form an interference light beam, wherein a an absolute position of said target is determined using an interferometric technique utilizing said plurality of wavelengths of said light beam and an angular value of said incident light beam and said interference light beam, and wherein said angular value depends on said reflection.

2. (original) The optical position-tracking system as recited in Claim 1 further comprising a processing unit for determining said position of said target.

3. (canceled)

4. (canceled)

5. (original) The optical position-tracking system as recited in Claim 1 wherein said target includes a retro-reflecting surface.

6. (original) The optical position-tracking system as recited in Claim 1 wherein if said target reflects said incident light beam when said incident light beam is at a particular angular value, said light beam steering device sweeps said incident light beam through a limited angular range that includes said particular angular value until said target fails to reflect said incident light beam.

7. (original) The optical position-tracking system as recited in Claim 1 wherein said light beam steering device is one of a MEMS (microelectromechanical system) motor beam steering device, a galvanometer beam steering device, an acousto-optic beam steering device, an electro-optic beam steering device, a grating structure beam steering device, a holographic structure beam steering device, and a scanning mirror beam steering device.

8. (original) The optical position-tracking system as recited in Claim 1 wherein said light beam is generated by a light source selected from a group consisting of an incandescent technology-based light source, a LED (light emitting diode) technology-based light source, a semiconductor laser technology-based light source, and a rare-earth laser technology-based light source.

9. (currently amended) A system comprising:
an optical device for generating an incident light beam and a reference light beam from a light beam, wherein said light beam has a plurality of wavelengths;
a light beam steering device for sweeping said incident light beam through an angular range to cause a reflection of said incident light beam by a target, wherein said reflection of said incident light beam is directed to interfere with said reference light beam to form an interference light beam, wherein ~~a~~ an absolute position of said target is determined using an interferometric technique utilizing said plurality of wavelengths of said light beam and an angular value of said incident light beam and said interference light beam, and wherein said angular value depends on said reflection; and
a computer system for receiving and using said position of said target.

10. (original) The system as recited in Claim 9 further comprising a processing unit for determining said position of said target.

11. (canceled)

12. (canceled)

13. (original) The system as recited in Claim 9 wherein said position enables controlling a cursor in said computer system.

14. (original) The system as recited in Claim 9 wherein said position enables inputting data into said computer system.

15. (original) The system as recited in Claim 9 wherein said target includes a retro-reflecting surface.

16. (original) The system as recited in Claim 9 wherein if said target reflects said incident light beam when said incident light beam is at a particular angular value, said light beam steering device sweeps said incident light beam through a limited angular range that includes said particular angular value until said target fails to reflect said incident light beam.

17. (original) The system as recited in Claim 9 wherein said light beam steering device is one of a MEMS (microelectromechanical system) motor beam steering device, a galvanometer beam steering device, an acousto-optic beam steering device, an electro-optic beam steering device, a grating structure beam steering device, a holographic structure beam steering device, and a scanning mirror beam steering device.

18. (original) The system as recited in Claim 9 wherein said light beam is generated by a light source selected from a group consisting of an incandescent technology-based light source, a LED (light emitting diode) technology-based light source, a semiconductor laser technology-based light source, and a rare-earth laser technology-based light source.

19. (currently amended) A method of optically tracking a target, said method comprising:

generating an incident light beam and a reference light beam from a light beam, wherein said light beam has a plurality of wavelengths;

sweeping said incident light beam through an angular range and determining an angular value of said incident light beam;

when said target reflects said incident light beam to generate a reflected light beam, directing said reflected light beam to interfere with said reference light beam to form an interference light beam; and

determining a an absolute position of said target using an interferometric technique utilizing said plurality of wavelengths of said light beam and said angular value of said incident light beam and said interference light beam, wherein said angular value depends on said reflected light beam.

20. (canceled)

21. (canceled)

22. (original) The method as recited in Claim 19 wherein said target includes a retro-reflecting surface.

23. (original) The method as recited in Claim 19 wherein said sweeping step includes:

if said target reflects said incident light beam when said incident light beam is at a particular angular value, sweeping said incident light beam through a limited angular range that includes said particular angular value until said target fails to reflect said incident light beam.

24. (original) The method as recited in Claim 19 wherein said sweeping step is performed by a light beam steering device, and wherein said light beam steering device is one of a MEMS (microelectromechanical system) motor beam steering